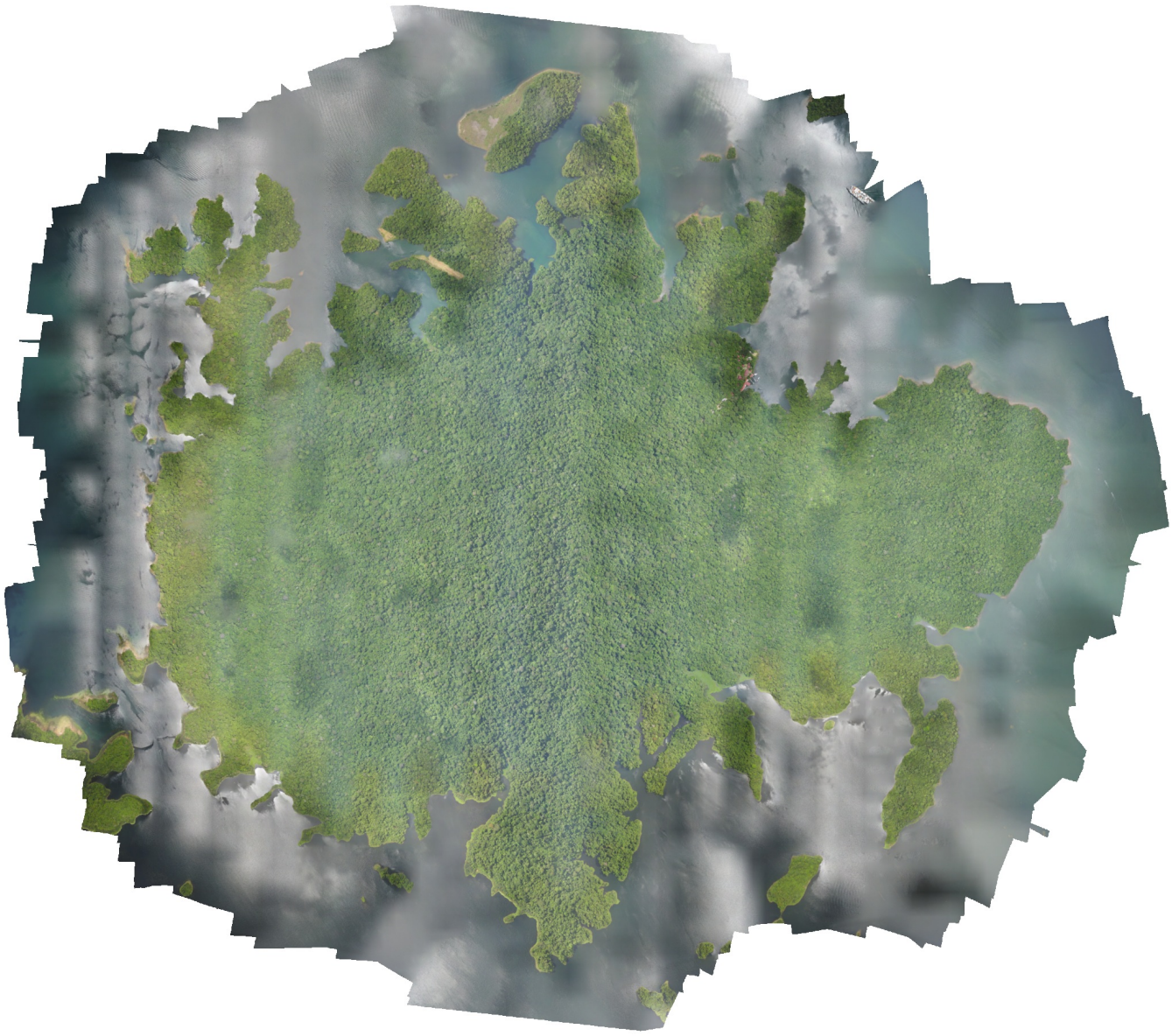
2020_07_31_BCI_Dipterix_Ebee

Processing Report

22 October 2021



Survey Data

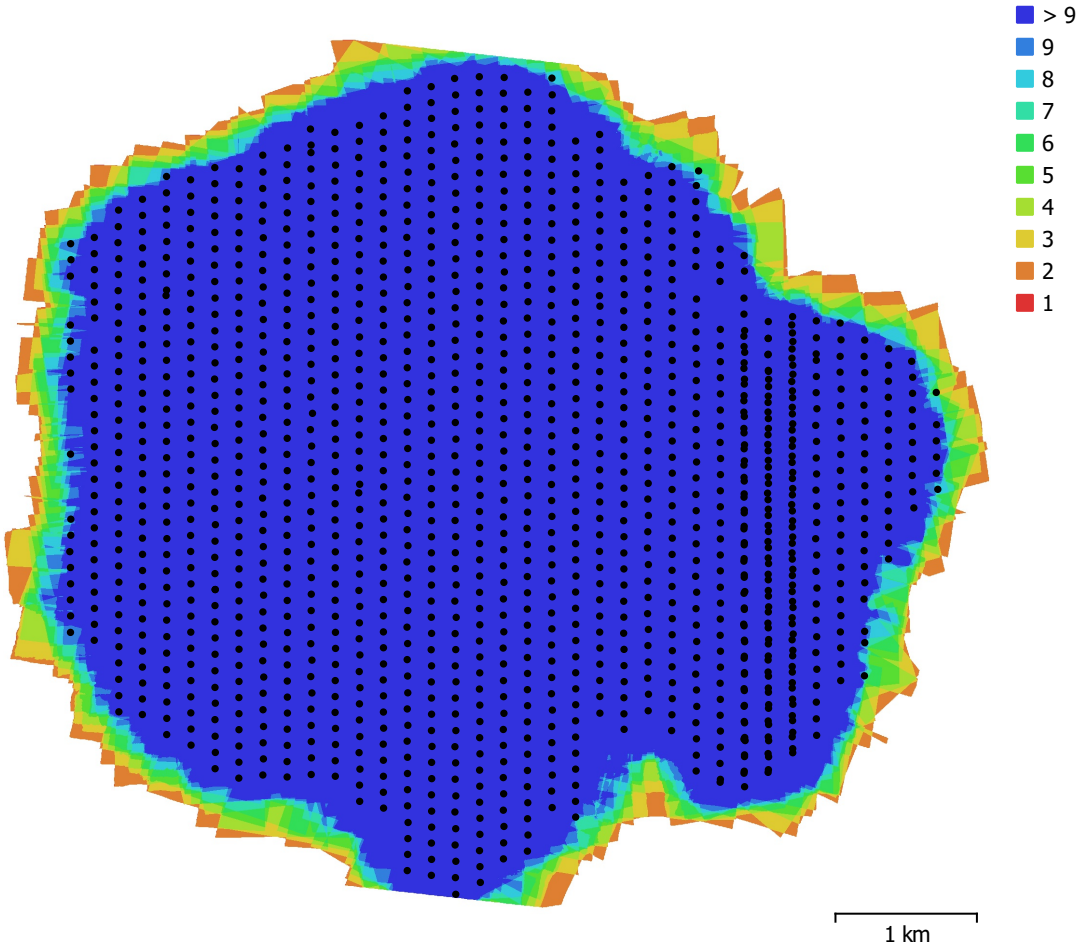


Fig. 1. Camera locations and image overlap.

Number of images:	1,414	Camera stations:	1,379
Flying altitude:	685 m	Tie points:	1,403,971
Ground resolution:	14.3 cm/pix	Projections:	3,600,874
Coverage area:	31.2 km²	Reprojection error:	1.08 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
S.O.D.A. (10.6mm)	5472 x 3648	10.6 mm	2.4 x 2.4 µm	No

Table 1. Cameras.

Camera Calibration

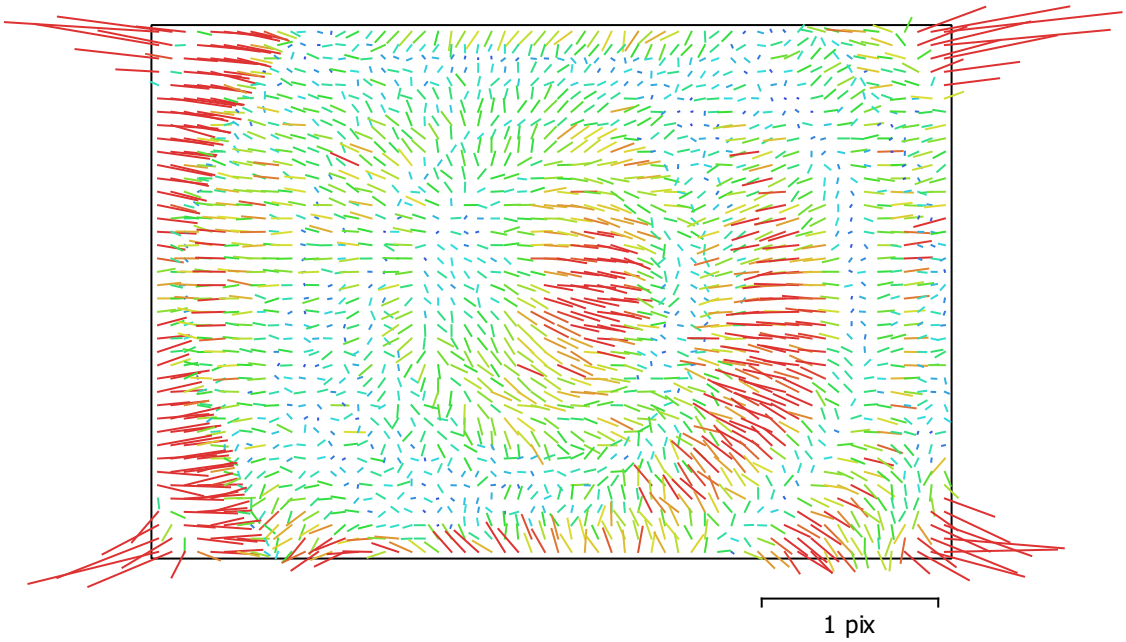


Fig. 2. Image residuals for S.O.D.A. (10.6mm).

S.O.D.A. (10.6mm)

1414 images

Type	Resolution	Focal Length	Pixel Size
Frame	**5472 x 3648**	**10.6 mm**	**2.4 x 2.4 µm**

	Value	Error	F	Cx	Cy	K1	K2	K3	P1	P2
F	**4401.33**	0.14	1.00	-0.05	-0.67	0.09	-0.10	0.22	-0.04	-0.15
Cx	**-17.6384**	0.042		1.00	0.05	0.02	-0.03	0.03	0.62	0.03
Cy	**6.19215**	0.055			1.00	-0.14	0.12	-0.19	0.04	0.53
K1	**0.0295529**	3.8e-05				1.00	-0.94	0.89	0.01	-0.16
K2	**-0.1982**	0.00016					1.00	-0.98	-0.03	0.04
K3	**0.295368**	0.00021						1.00	0.02	-0.07
P1	**-0.00219908**	2.3e-06							1.00	0.05
P2	**0.000651554**	2.7e-06								1.00

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

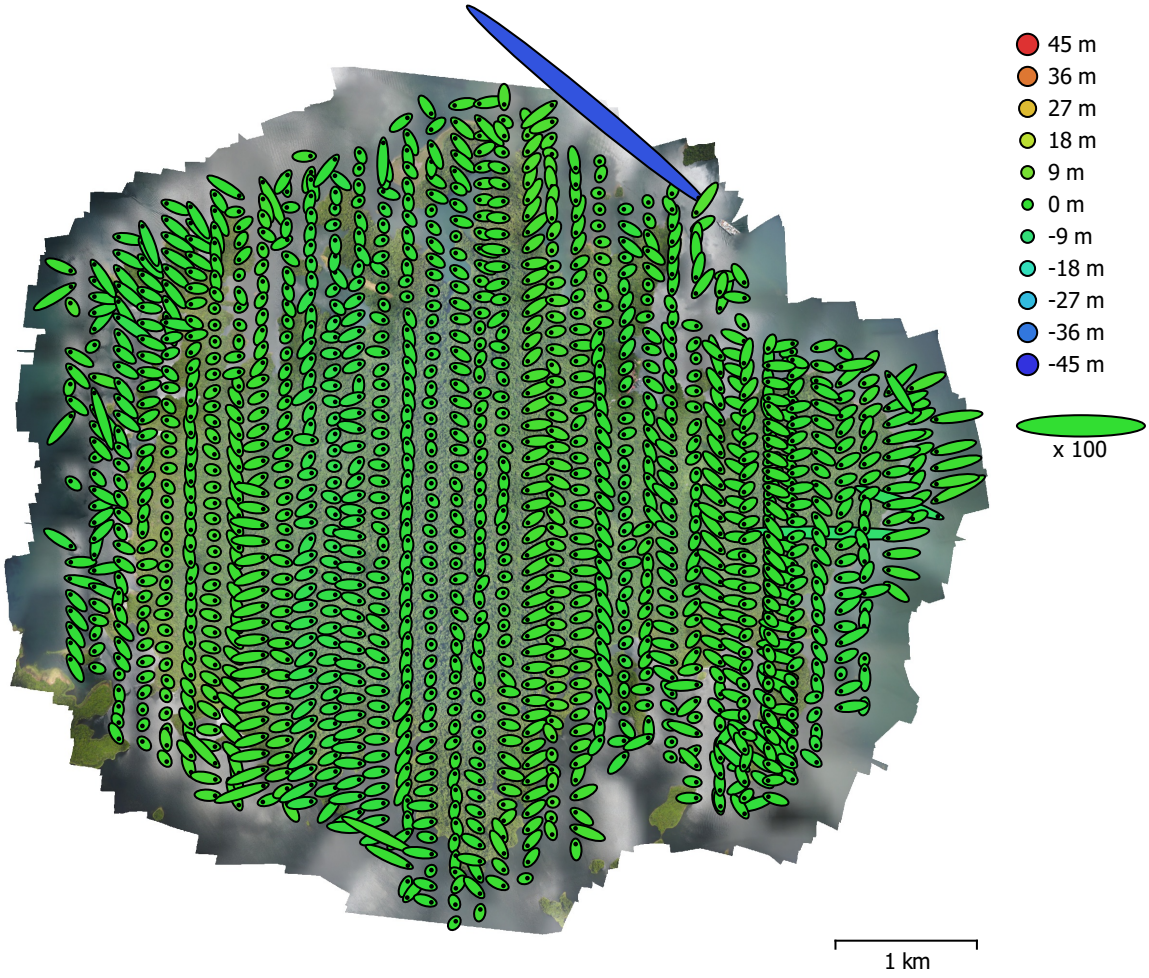


Fig. 3. Camera locations and error estimates.
Z error is represented by ellipse color. X,Y errors are represented by ellipse shape.
Estimated camera locations are marked with a black dot.

X error (m)	Y error (m)	Z error (m)	XY error (m)	Total error (m)
0.973943	0.725769	1.86842	1.21462	2.22852

Table 3. Average camera location error.
X - Longitude, Y - Latitude, Z - Altitude.

Digital Elevation Model

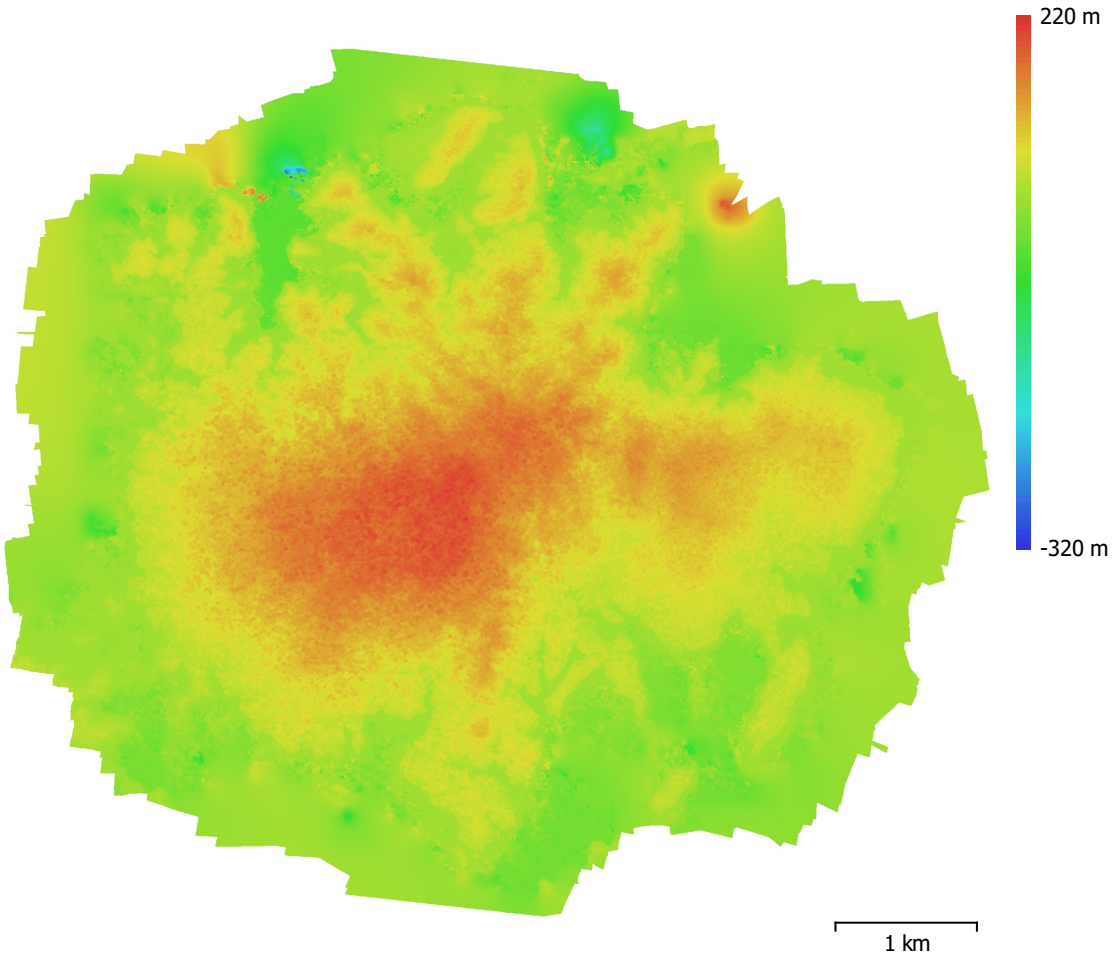


Fig. 4. Reconstructed digital elevation model.

Resolution:	57.4 cm/pix
Point density:	3.04 points/m²

Processing Parameters

General	
Cameras	1414
Aligned cameras	1379
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll
Point Cloud	
Points	1,403,971 of 1,498,416
RMS reprojection error	0.117819 (1.07553 pix)
Max reprojection error	0.355935 (33.5093 pix)
Mean key point size	7.82509 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	2.70817
Alignment parameters	
Accuracy	Medium
Generic preselection	No
Reference preselection	Yes
Key point limit	40,000
Tie point limit	4,000
Adaptive camera model fitting	No
Matching time	1 hours 22 minutes
Alignment time	7 minutes 41 seconds
Software version	1.5.3.8407
File size	98.52 MB
Depth Maps	
Count	1363
Depth maps generation parameters	
Quality	Medium
Filtering mode	Aggressive
Processing time	1 hours 1 minutes
Software version	1.5.3.8407
File size	1.69 GB
Dense Point Cloud	
Points	129,170,331
Point colors	3 bands, uint8
Depth maps generation parameters	
Quality	Medium
Filtering mode	Aggressive
Processing time	1 hours 1 minutes
Dense cloud generation parameters	
Max neighbors	All
Processing time	1 hours 40 minutes
Software version	1.5.3.8407
File size	1.63 GB
DEM	
Size	14,173 x 11,718
Coordinate system	WGS 84 / UTM zone 17N (EPSG::32617)
Reconstruction parameters	
Source data	Dense cloud
Interpolation	Enabled

Processing time	4 minutes 3 seconds
Software version	1.5.3.8407
File size	483.65 MB
Orthomosaic	
Size	48,507 x 42,695
Coordinate system	WGS 84 / UTM zone 17N (EPSG::32617)
Colors	3 bands, uint8
Reconstruction parameters	
Blending mode	Mosaic
Surface	DEM
Enable hole filling	Yes
Processing time	55 minutes 5 seconds
Software version	1.5.3.8407
File size	24.65 GB
System	
Software name	Agisoft Metashape Professional
Software version	1.7.5 build 13229
OS	Windows 64 bit
RAM	63.92 GB
CPU	Intel(R) Xeon(R) CPU E5-1650 v3 @ 3.50GHz
GPU(s)	Quadro M2000